Practical - I

Q1. Write a program in C++ to find largest of three numbers.

Source code :-

```
#include <iostream.h>
void main()
{
 int a, b, c;
 cout << "\n enter three numbers: ";
 cin >> a >> b >> c;
 cout << "\na = " << a << " b = " << b << " c = " << c;
 if (a>b)
 {
   if (a >c)
   cout << "\na=" << a << " is largest\n";
   else
   cout << "\nc =" << c << " is largest\n";
  }
  else
  {
    if (b>c)
     cout << "\nb =" << b << " is largest\n";
     else
     cout << "\nc =" << c << " is larges \n";
    }
}
```

Output :-

```
Enter three integer number :
 55  28  35
a=55
b=28
c=35
a=55 is largest
```

Q2. A set of integers is given. Write a program to count no. of positive integers, negative integers and zero in set.

Source code :-

```
#include <iostream.h>
void main ()
{
  int no,no_p=0, no_zero=0, no_n=0, i=1;
  do
  {
   cin >> no;
     if (no>0)
      ++ no_p;
   else if (no==0)
      ++ no_zero;
   else ++no_n;
   i++;
  }
  while (i<=10);
    cout <<"\n no. of positive integers = "<<no_p
     <<" no. of negative integers = "<<no_n
     <<" no. of zero integers = "<<no_zero;
}
```

Output:-

```
11 21 31 -40 0 45 23 676 -67 34
no. of positive integers = 7  number of negative numbers = 2
no. of zero integers = 1
```

Output:-

```
enter no. of students & subjects
2  3
enter roll no
101
enter marks of 3 subjects 101 : 67 87 78
total marks = 232
enter roll no
102
enter marks of 3 subjects 102 : 45 56 78
total marks = 179
```


Q3. A class of n students take an annual examination in m subjects. Write a program to read marks obtained by each student in various subjects and to compute and print the total marks obtained by each of them.

Source code:-

```
#include <iostream.h>
void main ()
{
  int n,m,i,j,no,marks,total;
  cout << "\n enter no of students & subjects\n";
  cin >>n>>m;
  for (i=1;i<=n;++i)
  {
    cout <<"\n enter roll no.\n";
    cin >>no;
    total=0;
    cout <<"\n enter marks of "<<m<<" subjects for "<<no<<":";
    for (j=1; j<=m;j++)
    {
      cin >> marks;
      total = total marks;
    }
    cout << "\n total marks =" << total;
  }
}
```

Output:-

```
Enter number of lines : 4
        1
      2 3 2
    3 4 5 4 3
  4 5 6 7 6 5 4
```


Q4. Write a program to construct pyramid of digits

Source code :-

```
# include <iostream.h>
void main()
{
  int p, m, q, n;
  cout << "\n Enter number of lines : ";
  cin >> n;
  cout << "\n\n";
  /* To print spaces */
  for (p=1; p <= n; p++)
  {
    for (q=1; q<=n-p; q++)
    cout << "  ";
    /* To print digits */
    m=p;
    for (q=1; q<=p; q++)
    cout << "  " << m++;
    m=m-2;
    for (q=1; q<=p; q++)
    cout << "  " << m--;
    cout << "\n\n";
  }
  cout << "\n";
}
```

Output:-

```
Enter number: 25
Factorial of 25 is 2076180480
```

Q5. Write in function in C++ to compute factorial of a number by using formula
$n! = 1 \times 2 \times 3 \ldots\ldots \times n$

Source code:-

```
# include <iostream.h>
long int factorial (int a) ;
voidmain ()
{
  int b;
  long int fact;
  cout << "\n enter a number:";
  cin >> b;
  fact = factorial (b);
  cout << "\n Factorial of "<<b<<" is "<< fact ;
} /* end of main*/
long int factorial (int x)
 {
   long int f=1;
   int i;
   for (i=x; i>=1 ; i—)
    f = f* i ;
    return (f);
 }
```